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IN THE

Supreme Court of the United States

OCTOBER TERM, 1934

No. 208

HERBERT H. WAXHAM, Doing Business as
WAXHAM HATCHERIES,
Petitioner,

vs.

SAMUEL B. SMITH and THE BUCKEYE INCUBATOR COMPANY,
Respondents.

BRIEF FOR RESPONDENTS.

Statement of Case.

In the case of *Smith* v. *Snow* (No. 102), now pending before this Court, the same patent and substantially the same questions of infringement are involved as in the present case. The incubators involved in the instant case, while differing in structural details, are the same in principle and mode of operation, as the incubators involved in the *Snow* case (Pet. Brief, p. 3). Both *Waxham* and *Snow* rely upon the same defense with regard to the matter of egg arrangement, each contending that he does not

infringe because he does not follow the exact order of egg arrangement described in the specification of the Smith patent, and does not shift the eggs periodically to maintain that order. Each of these infringers of the patent repeats the fallacy that in order to carry out the interchange of heat, the air, as it leaves the fan, must strike the hottest eggs first, both ignoring the obvious effect of the *recycling air currents* which make order and maintenance of order non-essential.

In the instant case also, the party *Waxham* insists upon the "file wrapper estoppel", maintaining that, by reason of rejection and cancellation of broader method claims, the patentee is estopped to contend for a fair interpretation of the claims in issue. As in the *Snow* case, the petitioner here would require that limitations be read into the claim which neither appear therein nor were urged as considerations for allowance.

In the instant case also, the petitioner insists that details of the specific apparatus, shown in the patent, must be found in the petitioner's apparatus in order to find infringement, overlooking the fact that the claim in suit is for a *method* of incubation. Petitioner ignores completely the admission of his own experts, that the incubator involved in the present case carries on the process of egg incubation by exactly the method set forth in the claim in suit. The *apparatus* has been changed from that shown in the Smith patent, *but the process remains the same.*

In the instant case, as in the *Snow* case, the petitioner insists that the prior art imposes limitations upon claim 1, which make it necessary to adopt a narrow construction. In this contention the petitioner ignores the fact that there is nothing in the art which discloses the fundamentals of the Smith invention, *i. e.,* the combination of the two features of setting eggs at short intervals in a chamber or cabinet so that eggs of various ages are present therein and the application of a forced draft or current of air to those eggs. In this connection, the statement by

petitioner's expert, Mr. Fouts, is particularly interesting (R. p. 249):

> "I am asked whether there is a patent in the prior art disclosing a method whereby forcing means is provided to produce a current of air, other than changes of temperature, in a cycle, and, with eggs in various stages of incubation and arranged in tiers, so that the heat from one egg will be carried from that egg to the cooler eggs. I cannot point to any one patent which shows all of that."

Finally, the petitioner contends that the claim in suit is invalid as functional, stating that the results and functions of the Smith invention can be realized only with apparatus shown in the Smith patent. This argument, as we shall show, has no applicability to this case.

In addition, this is an attack upon the *validity* of the patent, and the several Courts of Appeal have universally sustained claim 1 of the patent. There has been no dissenting voice and, therefore, no conflict of opinions on this question.

The sole question concerning which there has been a conflict of opinion is, whether claim 1 should be given the scope of its own terminology and the breadth to which it is entitled by reason of the revolutionary character of the Smith invention and its far reaching effects upon commercial incubation of eggs.

We are advised that the companion case from the Eighth Circuit Court of Appeals (*Smith* v. *Snow*) has been set for argument during the same week that the instant case is set, and as the arguments in both cases will occur substantially together, and the points involved in the cases are the same, we respectfully refer the Court to our brief in that case for a fuller discussion of the patent in suit, the file wrapper, and other matters of the same general nature. We shall confine the present brief to those points of infringement which are peculiar to the peti-

tioner's construction and to certain details of the evidence which are not found in the *Snow* record. In the instant case the testimony, relative to the inception and original reduction to practice of the Smith invention in the year 1915, is more complete than in the *Snow* case, and more extended reference will be made thereto in this case. In the instant case also, the movement of the air throughout the machine was expressly admitted by the petitioner to be in current form; in fact, there are drawings and affidavits *prepared by Robbins,* who is defending this case, which outline and define the current movement of air. As the air moving instrumentalities used by *Snow* are identical with those used by the petitioner here, the joint effect of the records in the two cases thoroughly establishes that both infringers use the recycling current movement of air characteristic of the Smith process.

History of this suit:

This suit was filed November 22, 1929, in the Southern District of California against the petitioner, who is a hatcheryman in Los Angeles County, operating what is known as a Robbins #23 incubator, manufactured and sold by John L. Robbins or the Robbins Incubator Manufacturing Company of Denver, Colorado. The manufacturer appeared and defended the suit (R. p. 180; Master's Report R. p. 27). The cause was referred to a master, David B. Head, before whom the case was tried. The Master reported his findings in a carefully prepared opinion (R. pp. 27-50), holding claim 1 of the patent valid and infringed. The defendant filed exceptions to the Master's report, but before they could be heard, the case was reopened before the Master on the alleged Fullington and Lawry prior uses. The testimony on these issues was taken by deposition, the plaintiff also taking the testimony of Dr. Smith and corroborating witnesses, as to the date of his successful reduction to practice. The Master filed a

supplemental report (R. p. 90) reaffirming the validity of the Smith patent, and finding that Smith reduced the invention to practice in the spring of 1915.

Again exceptions were filed, and the District Court (Judge McCormick) overruled all the exceptions and affirmed the Master (R. p. 106). A motion for rehearing was denied, and on appeal the Circuit Court of Appeals of the Ninth Circuit affirmed the District Court. The Court of Appeals made special reference to the Master's report, saying (R. p. 682; 70 F. (2d) 457, 460):

> "In this case we are satisfied that the decision of the master is correct for the reasons we have stated, and for others which are more elaborately stated by the master and which we need not repeat."

The Master's opinion discusses the Smith patent with more understanding of the problems to be encountered and Smith's solution thereof than is shown in the decisions of many of the Courts. The Master is, we believe, the only one who has passed upon the Smith patent after seeing incubators in actual commercial operation. His observation was (R. p. 43):

> "To observe one of the plaintiffs' incubators in operation, wherein 52,000 eggs are in process of incubation at one time, and compare it with the small incubators of the prior art, leads to the conclusion that Smith's disclosure was an important departure, revolutionizing the practice of an old art. It has all the earmarks of a meritorious invention and must be so credited."

The Master also discussed, understandingly, the file wrapper of the Smith patent, and his summation thereof, at pages 36 and 37 of the record, is refreshingly clear.

The Smith invention:

When Dr. Smith first took up the study of incubation the only incubators in use were the old, desk-like boxes

in which a *single layer* of eggs of one age were subjected to heat in a still air environment. No one had successfully practiced any other method of hatching eggs artificially, and the number of eggs, which could successfully be hatched, averaged only about 300 eggs to an incubator. The operations were very unsatisfactory (R. pp. 137-139). Dr. Smith's aim was to produce some means by which eggs could be successfully hatched in numbers far in excess of the capabilities of the old incubators.

Starting with the year 1906 at Lykens, Ohio, Dr. Smith built his first machine in which 30,000 eggs were set all at one time, and out of this machine were hatched 30 chicks (R. p. 547). This first experimental machine bankrupted the inventor (R. p. 561).

In the year 1910 his experiments again broke him (R. p. 561). In 1912 he built an incubator of two-thousand egg capacity. This incubator was equipped with a fan and was filled with eggs all of the same age. This was a failure because the eggs heated up too much at the end of the run. In a preliminary test, a few trays of eggs of different ages were taken from other incubators. Dr. Smith did not appreciate the importance of staged-incubation for, when the incubator was operated for the commercial hatch, all the eggs were set at one time, and failure resulted (R. p. 561).

In 1913 Dr. Smith moved to Cleveland, Ohio, and built larger machines (R. p. 538). *In these machines, during the years 1913 and 1914, the eggs were all set at one time.* As stated by Dr. Smith (R. p. 538):

> "During the years 1913 and 1914 the hatches were unsatisfactory. There were so many eggs with chicks in that would die just before, or at hatching time, and by using a thermometer we found uneven temperatures, or variations in temperatures, in the various trays. A tray of good eggs would run much higher than a tray that contained fewer fertile eggs. In 1913 and 1914 we were setting eggs all of the same age in one compartment."

and again on page 539:

> "In 1913 and 1914 eggs were set all at the same time, or, in other words, the compartment was filled with eggs and they remained there then for three weeks until they hatched."

and again (Rec. p. 539):

> "During the years 1913 and 1914 we would always have a bunch of eggs left in the trays with dead chicks in them, which we attributed to the uneven temperature and overheating of the eggs".

and at page 560:

> "The temperature of the eggs in the Cleveland incubator, which I used during 1913 and 1914, was not uniform. The eggs would heat up in spots and a great many times there would be a lot of fertile eggs would not hatch".

The statement in petitioner's brief beginning at the bottom of page 19 is erroneous. The petitioner insists that all that Smith did in 1915 over his earlier practice was to add the curtains. He added the curtains, it is true, *but he added the step of staged incubation at the same time. It is absolutely untrue that Smith publicly used staged incubation and forced circulation of air* prior to the hatching season of 1915.

The 1913 and 1914 experimental machines, *without staged incubation,* were not as efficient as the still air type of machine and dead chicks resulted (R. p. 539). Beginning with the season 1915, some structural changes were made and *the eggs were set for the first time in staged incubation* (R. pp. 536-537). When the *combination* of *staged-incubation* and *forced-draft* was adopted, success was attained.

The addition of staged incubation was the *last step* which was taken by Smith. Without the addition of the last step success would never have been attained.

The experience of Dr. Smith shows how essential to the process is the *combination* of forced-draft and staged-incubation.

Had Dr. Smith stopped at the point reached in 1913-1914, he would not have achieved success. Had he merely increased the strength and velocity of the current of air, or added the curtains, he would not have succeeded. It was only because he combined the idea of setting the eggs in staged incubation with his previous conceptions of the forced draft that he solved the problem. His success was almost instantaneous, and was so substantial that one cannot escape the conclusion that this was an invention of high order.

In July 1915, following the first season of successful operation with staged-incubation, George Cugley, the head of the old and established Buckeye Incubator Company of Springfield, Ohio, called on Dr. Smith with regard to an invention relating to brooder stoves (R. p. 518). At this interview Smith showed Cugley the incubators and explained their operation. As Cugley says (R. p. 520):

> "I had told my Springfield associates about this very unusual incubator, which was revolutionary in that it was accomplishing the thing that we had always regarded as impossible,".

Cugley got Dr. Smith's permission to build some small trial incubators at the Buckeye plant (R. p. 522), and these were thoroughly tested in the hatching season of 1917. The license to Buckeye was executed at the close of the 1917 season, after the trial period.

In 1929, when the testimony in this case was taken the total sales of incubators by Smith and his licensee reached over $19,000,000.00, and the total egg capacity over 152,000,000 (R. p. 176).

Artificial incubation had made no major advance until the Smith invention:

When Smith began his work he found the art of no extent or importance and confined to the use of the small, unsatisfactory cabinets. When he had completed his work in 1915, he opened up possibilities of commercial incubation beyond the dreams of anyone connected with the industry. The fact that, in a single room no larger than a small bed room, 52,000 eggs can successfully be incubated, is a result no one in the art had visioned. Today thousands of persons find employment in the operation of large commercial hatcheries, some of which employ large numbers of hatching units. Dr. Smith, himself, in 1923 was operating a million egg hatchery in Cleveland (R. p. 134), a capacity theretofore undreamed of.

Prior litigation:*

It is not surprising that the success achieved by Smith has excited envy and cupidity, or that many others, viewing Smith's success, would seek to reap some benefit therefrom. The record of the patent through the Courts shows the irresistible drawing power of success. Each and every worker in this field since 1915 has adopted and used forced circulation of air through eggs in various stages of incubation. The infringers have never succeeded in finding an anticipation of the Smith invention.

Two major arguments for non-infringement have been advanced by those who have followed Smith. One is that the patent is limited to a "current movement" of air. With this limitation we have no quarrel for, in the present case, the petitioner has admitted that he employs "current movement" of air.

---

* The decisions on the Smith patent are listed on pages 2 and 3 of the respondents' brief in the *Snow* case, No. 102, q. v.

The other major argument is based upon the contention that, in order to achieve the equalization of temperature, or, as stated in the claim, in order to carry units of heat from eggs in the more advanced stage to those in the less advanced stage, the air, as it leaves the fan, must play upon hot eggs first. The first Court to adopt this specious argument was the Sixth Circuit in the *Petersime* case (19 F. (2d) 721), and the last Court was the Eighth Circuit in the *Snow* case (70 F. (2d) 564). Between the dates of these decisions, however, the Circuit Court of Appeals of the Third Circuit had exploded the theory in the *Hillpot* case (24 F. (2d) 341), and the Circuit Court of Appeals of the Sixth Circuit had in the *Blum* case (27 F. (2d) 333), retreated from its former holding and the Ninth Circuit, in the instant case, had ruled that order of egg arrangement made no difference to the achievement of Smith's results.

As to this point the petitioner is bound by the admissions of his experts that the order of egg arrangement and the shifting of the eggs make no difference in the Smith invention (*infra,* pp. 25-28).

ARGUMENT.

POINT I.

The Patent in Suit.

The Smith process and claim 1:

The history of development of mass incubation shows that the essence of the invention is the *combination* of forced draft with staged incubation. The forced draft of air should not dry out the eggs too rapidly, and this Smith provided for by carrying on the process in a substantially closed chamber and restricting the interchange of air between the interior and the exterior of the chamber.

The claim is quoted below (Vol. II, p. 5):

> "1. The method of hatching a plurality of eggs by arranging them at different levels in a *closed chamber* having restricted openings of sufficient capacity for the escape of foul air without undue loss of moisture and applying *a current of heated air,* said current being created by means other than variations of temperature and *of sufficient velocity to circulate, diffuse and maintain the air throughout the chamber* at substantially the same temperature, *whereby* the air will be vitalized, the moisture conserved and *the units of heat will be carried from the eggs in the more advanced stage of incubation to those in a less advanced stage* for the purpose specified."

The *essentials* are shown by the following analysis of the claim:

(a) *The idea of mass incubation* necessarily means that the eggs are stacked in superposed trays, otherwise the large numbers could not be incubated in the small area

of a Smith (or Robbins) incubator. This is covered by the words

> "The method of hatching a plurality of eggs by arranging them at different levels in a closed chamber".

Petitioner's witness, Prof. Dougherty, testified (R. p. 295) that, in petitioner's machine "eggs are arranged at different levels".

In spite of this the petitioner seeks to read the phrase "at different levels" to mean that the eggs must be shifted during the process. This is an ingenious argument but fallacious, for, as pointed out by the Circuit Court of Appeals of the Third Circuit in the *Hillpot* case (24 F. (2) 341, 342):

> "Now it had become a practice in incubation, born of convenience, not of necessity, to put fresh eggs at the top of the tiers and move them down as incubation progresses until the eggs that are about to hatch are at the bottom where the chicks can be taken out and the litter consequent upon hatching can be easily removed. This arrangement is not always followed. *Sometimes trays of eggs in the more advanced stage of incubation are 'sandwiched' between trays of eggs in less advanced stage. These are arrangements of eggs 'at different levels'.*"

As pointed out by the Circuit Court of Appeals of the Eighth Circuit in the *Snow* case (70 F. (2d) 564, 567):

> "The statement of the claim is that the eggs are arranged 'at different levels'. This is broad enough to cover any arrangement at more than one level".

The Master in the present case analyzed this phrase correctly when he said (R. p. 48):

> "To find infringement it is only necessary to find that eggs in more than one stage of incubation, arranged at more than one level in a closed chamber with restricted openings, are subjected to the air currents previously discussed and defined."

The Court of Appeals of the Ninth Circuit in the present case held (R. p. 681; 70 F. (2d) 457, 460):

> "The appellant seeks to avoid the claim of infringement by reason of the fact that the eggs in his machine are not placed in a single column with the fresh eggs at the top and eggs which are hatching at the bottom, but are distributed through the chamber without any endeavor to place them in this exact relationship. This difference is clearly immaterial where the air in a chamber is kept at a constant and uniform temperature and rapidly circulated. The result of currents of air moving with high velocity would be to transfer heat from the older eggs to the fresher and colder eggs in either event. The important thing is the high velocity of the air current, avoiding stagnation in the immediate vicinity of the eggs in later stages of incubation."

Notwithstanding the overwhelming authority to the contrary, the petitioner insists (p. 8) that "arranging eggs at different levels" necessarily means the "initial placement of eggs at one level followed by periodical relocation at successively lower levels until final hatching takes place at the bottom".

In order to support this point, the petitioner is forced to insert the word "progressively" in his analysis of the claim in line 2 from the bottom of page 15. But no such word appears in Claim 1 of the patent quoted immediately above.

The "different levels" refers *not* to any progressive shifting of eggs but is specified to distinguish from the small incubators of the prior art in which all the eggs were on *one level.* This arrangement of the eggs at "different levels" permits the current of air readily to reach the large number of eggs in their various stages of incubation—all of which is essential to the success of the large incubators Smith created.

The claim contemplates a plurality of settings. It is impossible to carry heat from eggs in a more advanced

stage to eggs in a less advanced stage, if only one setting of eggs is in the incubator, and it is impractical to arrange the thousands of eggs in various degrees of incubation, except by arranging them in stacks of superposed trays: therefore, "arranging the eggs at different levels" means that eggs of different ages are at different levels.

Had Smith intended to confine himself to the *progressive* arrangement of the eggs, it would have been a simple matter to have worded his claim to convey this meaning. The simple and direct meaning of the phrase is that, at any time after the process has been set in motion, we find eggs arranged at different levels, *i. e.,* stacked in trays one above the other so as to conserve the space. Nor does the specification convey any other meaning. The opening sentence gives the answer to petitioner's contention where it says, lines 8 to 15, page 1:

> "The improved apparatus and method, is particularly designed for *extensive operations* wherein a chamber of large dimensions is adapted to contain *thousands of eggs in separate trays arranged in tiers* and the method of heating is such that the heated air is adapted to the eggs *in various stages of incubation*" (Vol. II, p. 4).

In the argument which accompanied the claim in suit, it was made clear what was meant by the phrase "at different levels".

> "Applicant by the introduction of a current produced by mechanical means distributes and diffuses the heat throughout the egg chamber and gives an even temperature in all parts of the chamber *whereby it is possible to place the eggs at different levels*" (R. Vol. II, p. 359).
>
> "The so-called Mammoth Incubators of recent years are all made with the egg trays in the same horizontal plane" (R. Vol. II, p. 359).

And again on page 360:

> "Applicant's incubator is clearly distinguished in that a power driven current is employed to establish

a uniform temperature throughout the area of the egg chamber *whereby the eggs can be placed at different levels''*.

(b) The idea of moisture conservation by restricting the interchange of foul and fresh air to a negligible percentage of the whole body of air is contained in the clause:

> ''in a closed chamber having restricted openings of sufficient capacity for the escape of foul air without undue loss of moisture''.

This expression necessarily brings in its train the idea that the main body of the air is circulated over and over again in repeated cycles. This was expressed by the Court of Appeals of the Third Circuit in the *Hillpot* case (p. 343):

> ''In Smith, after the air enters, there is no quick exit. The first requisite is a closed chamber and from this chamber no air, except foul air, escapes; the main body is retained in the chamber and is moved in cycles through the corridor and egg columns, around and around, on and on, without any defined end.''

(c) The equalization of temperature throughout the mass of eggs by the mechanical propulsion of a current of air, as distinguished from ''natural drafts'', is contained in the clause

> ''and applying a current of heated air, said current being created by means other than variations of temperature and of sufficient velocity to circulate, diffuse and maintain the air throughout the chamber at substantially the same temperature.''

This expression has been held to limit the claim to ''current'' movement of air as distinguished, from indeterminate mixing or beating of the air. As there was not present in the prior art even the beating or agitation of air around eggs of various stages of incubation, this limitation is, perhaps, unnecessary, but it does not confine

the patent unduly here, for the petitioner employs current movement of air (see pp. 28-36, *infra*).

(d) Maintaining the air at a sufficient oxygen content to promote and maintain the life of the embryo without too rapid drying is set forth in the phrases:

> "whereby the air will be vitalized, the moisture conserved."

(e) The setting of the eggs in staged incubation and the reciprocal interchange of heat between those eggs which have passed over into the heat generating phase, and those eggs which are still in the heat absorbing phase, is expressed in the clause:

> "and the units of heat will be carried from the eggs in the more advanced stage of incubation to those in a less advanced stage for the purpose specified."

None of the non-essentials upon which the petitioner relies to escape infringement, appear in the claims.

(1) There is nothing in the claim which specifies that the eggs shall be set in any specific order or that the air as it leaves the fans shall strike the hot eggs first. As the Court of Appeals of the Third Circuit said in the *Hillpot* case (p. 343):

> "Undoubtedly that is the preferred method described and, certainly, that is the working of the apparatus of claim 4, not of the apparatus of claim 5. *But it is not the working of the methods defined by claims 1 and 2 for they are not so limited in terms.*"

(2) There is nothing in the claim which requires or makes essential progressive downward shifting of the eggs during the process. If order of egg arrangement is not material, then the maintenance of any order cannot be material either.

(3) There is nothing in the claim about curtains or partitions to direct the current flow of air. These are, in reality, details of the *apparatus* of Smith, and if, petitioner's incubator employs the current movement of air,

the fact that his apparatus differs from Smith's is of no consequence.

(4) The particular arrangement of egg trays is not essential to carry out the reciprocal interchange of heat or for "heat units" to be carried from hot to cold eggs. The recycling movement of air in Smith, will effect the interchange of heat whatever be the order of egg arrangement.

The file wrapper does not require any non-essentials to be read into the claim in suit:

To secure the allowance of the claim in suit, Smith was not compelled to insert any reference to these "non-essentials" in the claim. The petitioner can not substantiate his arguments for non-infringement by reference to the file wrapper (R. Vol. II, pp. 317-377).

The Master's analysis of the file wrapper is clear and brushes aside the web of untruth which others have sought to weave about this document. The Master said (R. pp. 36-37):

> "Upon the scope of the claims defendant has argued that the file wrapper and contents of the Smith application impose specific limitations. The contention is that this limitation goes to the extent of limiting Smith to an arrangement whereby the currents of air coming from the fan must first be passed over the eggs in the last stages of incubation and thence over the other eggs, so that the progression is such that the newest eggs are the last to be reached by the circulating air. This must be upon a theory that the transference of heat from old to new eggs must be accomplished in one cycle. This limitation is not expressed in either of the claims,* in that the claims go no further than to say that the eggs must be arranged 'at different levels' and the air impelled with sufficient velocity 'to circulate, diffuse and maintain the air throughout the chamber at substantially the same

* The Master was here referring to Claim 1, here in issue, and also to claim 2, *not now* in issue.

temperature,' whereby 'the units of heat will be carried from the eggs in the more advanced stages of incubation to those in a less advanced stage.'

"In examining the file wrapper it is found that the Smith application passed through the usual interchange of ideas and comments between the examiner and solicitor. Claims were offered and rejected. By the paper 'E' [R. Vol. II, pp. 357-360] the claims in suit were added and allowed without comment from the examiner. Although arguments were offered prior to that time which pointed out the specific arrangement of old and new eggs in the Smith structure and this point was before the examiner, no limitation to this specific arrangement was required as to claims 1 and 2. Having this in mind and having previously taken note of the patented prior art, if the examiner had felt that some limitation should have been imposed he surely would have answered the amendment 'E.' From this it is logical to assume that the examiner had reached by that time a full understanding of the disclosure and could find no reason to require such limitation. The master is unable to find that the file wrapper and contents place any limitation upon the claims beyond a fair construction of their language viewed in the light of the prior art and the disclosure of the patent. There appears to be nothing in the prior art to limit the claims to an arrangement of eggs progressively as to age from bottom to top when subjected to a forced air current. The prior art shows such an arrangement but not in combination with a forced draft."

The only attempt made by the petitioner to point out differences between claims cancelled and the claim in suit occurs on page 15 of the brief. The italicized parts of the claim as allowed (in the right hand column) are "arranging them at different levels"; the "current" of air "created" by means other than variations of temperature. But these limitations do not free the petitioner's practice. The petitioner certainly arranges the eggs at "different levels", as can be seen simply by looking at

the illustration of its incubator (Vol. II, p. 12). The petitioner also has "current" movement of air, as we shall see.

The petitioner does not deny that he arranges his eggs "at different levels" but states that he does not arrange them *progressively* at different levels. But, as we pointed out above, *the limitation as to progressive arrangement is not in the claim.* The petitioner also says that he does not use "Smith's *directed and confined* current of heated air". He does not deny that he uses a *current* of air as called for by the claim. The claim does not say anything about a "directed and confined" current.

If these elements are not present in the claim in issue, it is idle for the petitioner to contend that either of them was added as a condition of allowance. There is, therefore, no file wrapper estoppel.

As pointed out in our brief for respondent in the *Snow* case (pp. 26-36), the element which was added to the claims just before allowance, and the concurrent amendment to the specification, imputed into the claim the essential of moisture conservation by the addition of the limitation that the process was carried on in a substantially closed room with the "restricted openings" to prevent "undue loss of moisture". But the petitioner can make nothing of this for, in the Robbins incubator used by petitioner, the openings for the interchange of air are such that only *one-tenth of one percent* of the entire volume of air passes to and from the machine in one circuit or cycle (R. p. 173). 99-9/10% of the whole body of air recycles through the machine. Thus the moisture is conserved in the same way that Smith conserves it.

It is noteworthy that petitioner does not point out where the claim includes the specific order of eggs.

Claims *not in suit* contain the limitations upon which the petitioner seeks to avoid the claim in suit:

It is a well known principle of claim construction that, where a patent contains a number of claims which differ

in scope, the broader claims will not be construed as containing the narrower limitations of more specific claims, and, conversely, that the presence of the narrowing limitations in the more specific claims indicates that those limitations were intentionally omitted from the broader claims.*

Applying this rule to the Smith patent, it will be noted that the curtains which constitute the central corridor are found in claims 2, 3, 4 and 5. *This element was omitted from claim 1.*

The vertically directed current is included in claims 3 and 4 but is omitted from claim 1.

It is, therefore, evident that claim 1 in suit was intentionally drafted in terms of sufficient breadth to cover a process of incubation combining staged incubation and forced draft in a substantially closed room devoid of curtains or partitions or corridors, and irrespective whether the current of air moved in any direction or plane.

As the petitioner says in his brief (p. 22), the claim is "simply for the function" (process) "that takes place in any enclosure containing eggs at different stages of incubation into which a current of air is directed". It is not true, as the petitioner states, that the claim covers "currents * * * generated by differences in temperature" for the claim specifically calls for currents "created by means *other than* variations in temperature". Nor is it true, as stated by the petitioner, that the process covered by the claim was old. It was new. Neither the petitioner, nor any other defendant, has been able to anticipate it, and it has been held valid by every Court which has passed upon the Smith patent.

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* *Symington Co.* v. *National Castings Co.,* 250 U. S. 384-385;
Skelton v. *Baldwin,* 58 F. (2) 221, 227;
Los Angeles Art Organ Co. v. *Aeolian Co.,* 143 F. 880-885;
Wm. B. Scaife & Sons Co. v. *Falls City Woolen Mills,* 209 F. 210-215.

POINT II.

Petitioner Infringes.

(a) The petitioner's incubator:

The Robbins incubator used by the petitioner is shown in various photographs (R. Vol. II, pp. 12-16). The fans which recirculate and cycle the air are shown at Vol. II, pages 16-18, and the paths of the air currents are shown by the arrows in those views subject to the slight modification made by petitioner's expert in concentrating more of the return current in the space between the tilting incubation trays and the horizontally arranged hatching trays at the left of the incubation trays. The current of air, as it is propelled by the large fans on the back walls of the machine, moves outwardly over the floor, walls and ceiling, as shown at Vol. II, page 16, and striking the front wall turns back to the fans and moves inwardly in current form until it reenters the fans and is again circulated. There is no dispute about this. As the Master said (R. p. 45):

> "The evidence on this point has been greatly clarified by the substantial agreement of the experts for both parties (Taggart and Daugherty). The plaintiffs' proof is in agreement with representations made by Robbins in the case of *Petersime* vs. *Robbins*, in the District of Colorado (plaintiffs' Exhibit 17). The master observed experiments on the Robbins machine in evidence and upon a similar machine in actual use at the Goddard Hatchery near Gardena. The air in the Robbins machine is driven outwardly from the sides of the fans and forwardly along the walls of the chamber at a speed of around 900 feet per minute. The air strikes the front wall of the chamber and turns inwardly at about 250 feet per minute. It passes through and around the trays on returning to the fans at speeds varying from 40

> to 350 feet per minute, increasing as it nears the vortex of the fans to as high as 600 feet per minute. Anemometer tests in machines both empty and filled with eggs showed that the air was moving in definite paths throughout the whole mass of eggs with perhaps one exception along the left edge of the stationary trays where the outgoing and incoming air forms eddies for the space extending two or three inches across. This space is a very small part of the whole."

The eggs for the first 18 days are held in the large tilting drum shown in three positions at the right of the drawings at Vol. II, pp. 12-15. They are put in at three day intervals, or, in other words, about 1/6th of the capacity of the tilting drum is set at a time (R. p. 154). No particular order is observed nor is it necessary. Each tray of eggs, after having been in the tilting drum eighteen days, is moved over into the hatching racks at the left, and its space is filled with a tray of fresh eggs, so that the drum always contains eggs in *staged incubation.* Directly behind the fans are small openings for the admission of the fresh air, and in the ceiling are the openings for the exit of foul air. As noted above, the rate of interchange is 1/10th of 1% of the whole body of air in motion. The air in Robbins moves in current form in repeated cycles over the eggs in the various stages of incubation, picking up heat from hot eggs and distributing heat to cold eggs.

(b) The equalization of temperature in petitioner's practice:

The interchange of heat, conservation of moisture and recycling of air are all bound up together in Robbins. They are all manifestations of the same thing, namely, that in the Robbins incubator the air is propelled in regular and defined courses in current form so that it penetrates to every recess of the egg chamber, picking up heat from those eggs which are hotter than the air stream, and imparting heat to those eggs which are colder.

(c) The equalization of temperature in the petitioner's incubator is performed in the same manner as in the Smith incubator:

The Master said (R. pp. 38-39):

> "It is proper to consider here the actual physical phenomena as shown in the Smith incubator in practice. The velocity of the air as impelled by the fans is found to be quite rapid. It is so rapid that a particle of air in a single cycle is not apt to come in contact with but a small number of the eggs in the incubating compartments. For this reason, it is not material to the process that in any one cycle one particle of air should come successively in contact with eggs in each stage of incubation. From the very nature of the process this is impossible in the Smith machine in view of the velocity of the air. However, it is essential that the air be circulated with such velocity that particles of air move around all of the eggs and that the air is so mixed and diffused that heat units are transferred through the mass, so as to maintain a uniform temperature. A uniform temperature is not maintained by a single unit taking heat from an old egg and transferring it to a new egg, but by the whole mass being circulated, mixed and diffused so rapidly that no part of the chamber can reach a temperature materially at variance with the remainder of the chamber. During the process heat is transferred by the medium of the air from the older hot eggs to the newer cold eggs. If we disregard the small amount of air that is constantly changing through the restricted openings, the air is circulated in closed cycles, and the order in which the eggs are arranged does not seem to affect the process, so long as the eggs are arranged at different levels so that the circulating air may reach all of them."

This common sense analysis of the actual operation of the Smith machine makes illogical any argument for non-infringement based upon the theory that the air *as it leaves the fan* must strike hot eggs first and then prog-

ress to cold eggs. In Smith, the equalization of temperature is carried on, not by a single passage of the air over the eggs, but by the repeated cycling of substantially the same body of air over and over again through the eggs. If 99-9/10% of the air in the petitioner's machine gets back to the fan again and starts on another cycle, equalization of temperature is carried on in the same way.

In fact, as we will point out immediately, the experts for the petitioner specifically and definitely admitted that neither the order in which the eggs were arranged, nor the shifting of eggs which merely retains that order, is essential. This is a fact which not only follows logically from a consideration of the cyclic movement of air in the Smith machine, but also pragmatically from an observation of the operations of infringers. The petitioner arranges his eggs in any fashion, and the same equalization of temperature takes place. Snow (in case No. 102 in this Court) had an elaborate system of "sandwiching", but still the same results were achieved. The combinations in which the eggs may be arranged are limited only by the numbers of combinations which are mathematically possible; if, however, the recycling currents of air characteristic of Smith flow over the eggs, the hot eggs will give up their heat and cold eggs will abstract that heat from the current of air, no matter what particular combination is selected.

(d) The testimony of petitioner's experts constitutes admissions of infringement:

In the trial of the case the petitioner employed two experts; the first was Mr. Samuel E. Fouts who had a long training in the Patent Office as an Examiner, and subsequently as a member of the Appellate Board of the Patent Office (R. pp. 183-184). The other expert was Robert L. Daugherty, head of the School of Mechanical Engineering of the California Institute of Technology (R. p. 275). The testimony of these experts cannot lightly

be disregarded by the petitioner, and the admissions as to facts of infringement are binding upon him.

The two points upon which these witnesses gave valuable testimony were

(i) the immateriality of differences in order of egg arrangement on the carrying on of the Smith invention; and

(ii) the unimportance of curtains as a means to direct current movement of air, provided the speed and volume of the air in motion was strong enough to maintain its own current movement throughout the cabinet.

i.

The course of the air in the Smith commercial machine is well illustrated in the drawing at Vol. II, p. 11. There seems to be no dispute as to the facts of air recirculation. If the air recirculates and recycles through the eggs repeatedly, the equalization of heat will necessarily take place in any arrangement of eggs. This seems to be admitted by the petitioner at page 22 of the brief, where it is stated:

> "Manifestly, if any current of air is blown over a miscellaneous lot of articles, some at one temperature and some at another, it will necessarily equalize the general temperature in the chamber by removing 'units of heat' from the warmer articles and delivering 'units of heat' to the cooler articles."

This admission by the petitioner is wholly inconsistent with the claim made at page 19 of the Petition in this case that, in order to accomplish the equalization of temperature, which is the essential of the Smith patent, "the air must first strike the *hottest* eggs." With the record in this case petitioner could not rely upon any such narrow view of the Smith invention. The statements by petitioner's witness Mr. Fouts invalidate all of petitioner's arguments based upon the order of egg arrangement.

As Mr. Fouts said:

"In the Smith patent and incubator *and in the Robbins incubators* the air is kept sufficiently humid to prevent the excessive drying out of the eggs, and *the movement and recirculation of the same body of air in the egg chambers* contributes to that result, and preserves a uniformity of the conditions of the atmosphere. The admission of fresh air and the discharge of foul air is limited so that the moisture within the body of air is preserved" (R. p. 240).

"In both the Smith and the Robbins machines, as the closed cycle of air moves through the eggs it maintains a constant temperature throughout the chamber, which prevents local hot spots" (R. p. 241).

"But as long as you have a closed cycle or a closed circuit of air current any eggs which are put in that current are going either to take up heat from the current or give off heat to the current, depending upon whether or not they are hotter or colder than the air in there" (R. pp. 242-243).

"The same thing can be done almost *ad infinitum,* or, in other words, the egg trays can be placed in any particular arrangement and so long as a closed circuit of air is created the heat will be carried from the old eggs to the fresher eggs. I think that is right" (R. p. 243).

"In a practical sense it makes no difference as to the purpose of the moving of the cycle of air in what arrangement the eggs are placed relative to their age.
'Q. That is, as respects the claims of the patent, do you mean?
A. Yes'" (R. p. 243).

"If you refer to the operation of the Smith structure it makes no difference as a final result, that is, the air will come to a definite temperature and that will be such as to take heat units from the hot eggs and distribute them to some of the cold eggs. These arrangements all come within the Smith method. I do not believe it makes any great difference whether or not the closed cycle is moving in a vertical plane

or in a horizontal plane as to its operation and it would practically accomplish the same thing if it were tilted in a diagonal position" (R. p. 244).

"Q. As the air is moving in a closed cycle, it does not make any difference how the eggs are arranged so long as there are different ages of incubation? A. Only would that be true as an ultimate result. You would finally get air throughout the whole cycle into a temperature where it is uniform and it will pick up heat from one egg and carry it to another egg somewhere in the cycle" (R. p. 245).

"The air within the chamber is forcibly moved in currents in a closed cycle as distinguished from convection currents, although a fan is not necessarily used, but by some means other than a change of temperature, or, in other words, by any mechanical means whereby convection currents are not used. The cycle, or current of air, moves through the body or mass of eggs from either the upper or the lower, or from the lower to the upper, end of the tier and in so moving a substantially uniform temperature is maintained throughout the chamber and the eggs, which would not be possible without such a circulation. The air picks up the heat units given off by the eggs in the more advanced stages of incubation and imparts the said heat units to eggs in the less advanced stages of incubation. *As the air moves in a continuous cycle through the eggs, the direction of the air is of no moment to obtain the broad result that you have stated here.*

The order in which the eggs are placed in the different stages of incubation in that current of air for the transfer of heat *is immaterial in the practical operation of the Smith machine,* although I do not see that it makes much difference after the thing gets going once" (R. pp. 246-247).

"Q. Then, as a matter of fact it is not necessary to move the eggs but just to place them so that you have eggs in varying stages of incubation in that column of air or in that current of air? That is correct, isn't it? A. I think that is correct; yes" (R. pp. 247-248).

Petitioner's witness, Prof. Daugherty, also made important admissions upon the immateriality of egg arrangement.

Prof. Daugherty said:

> "I believe that the amount of air introduced into the *Robbins incubator* through the restricted inlets and then expelled is somewhat less than one per cent of the total amount of air in the machine, and that means that on an average, *air entering the machine will circulate therein at least ninety-nine to one hundred times before it departs*" (R. p. 287).
>
> "Within narrow limits the circulations of air in the Robbins incubator would equalize the temperatures therein" (R. p. 294).
>
> **"but the circulation of air in the Robbins machine tends to maintain a constant temperature and the same tendency occurs in the Smith machine" (R. p. 294).**

Prof. Daugherty also testified that, in the Robbins machine, the eggs are arranged at different levels; this is directly contrary to petitioner's present contention. This witness testified (R. p. 295):

> *"In the Robbins machine eggs are arranged at different levels."*

In view of the above admissions of the petitioner's own experts, it is impossible for him to insist that he has avoided the Smith patent by merely changing the order of egg arrangement or by failing to shift the eggs during the incubating period, or that the phrase "arranging the eggs at different levels" is not descriptive of petitioner's operation.

ii.

When Daugherty was on the stand, he stated the facts as to the volume and velocity of the air movement in the Robbins machine. From these facts it appears that

Robbins secured the same current movement of air through the eggs as Smith secured, the simple expedient of increasing the volume and velocity of the air in movement, so that the curtains used with the lesser air velocities of Smith were unnecessary. It is immediately apparent that the distinction between the Robbins machine and the Smith patent on this point becomes one of *apparatus* merely.

The facts as to comparative volumes and velocities of air in movement in the Smith and Robbins machines were calculated in the Record in a joint discussion between the Master and the two experts, Daugherty for the petitioner, and Taggart for the respondent. This discussion occurred at pages 300-303. It was summed up by the Master at pages 47 and 48 of the Record:

> "The question is answered by the findings made as to the currents in the Robbins incubator as compared with the currents in the Smith machine. It was found that there was no substantial difference in the velocity of the currents and that in both machines there were definite currents passing through and around eggs, with the effect of keeping them at a uniform temperature. Over the eggs in the tilting trays the lowest velocities were in the neighborhood of 40 feet per minute. *The absence of curtains or partitions in the Robbins machine is compensated by increased fan capacity. The two fans of Robbins have a capacity of approximately 12,000 cubic feet compared with a capacity of the four in Smith of 6,000 cubic feet per minute. It is evident that by omitting positive directing means such as partitions Robbins has impaired the efficiency of his machine in using greater fan capacity to obtain the same velocities.* That a process or structure is less efficiently applied than a patent specified is no defense to a charge of infringement,—*King Ax Co.* vs. *Hubbard,* 97 Fed. 720; *Elyria Iron & Steel Co.* vs. *Mohegan Tube Co.,* 17 Fed. (2nd) 827; *Standard Brands* vs. *Federal Yeast Corpn.,* 38 Fed. (2nd) 329—or that the process is carried out by an apparatus or mode differing from that specified in the patent—*Tilgham* vs. *Proctor,* 103 U. S. 707."

This was thoroughly understood by the Court of Appeals of the Ninth Circuit when it said (R. pp. 680-681; 70 F. (2d) 457, 460):

> "the air is forced from the periphery of the large fan operating in the inclosed space to the walls of the incubating chamber and follows the side walls to the front doors where, striking those doors, it is deflected inward and then drawn to the center of the fans by the suction resulting from the outward movement of the air along the blades of the fan to their periphery. In actual operation the fan is large and moves with high velocity, so that the current of air leaving the periphery of the fan and going outwardly along the walls of the chamber is moving about 900 feet per minute, its speed when it strikes the front wall of the chamber and turns inwardly is about 250 feet per minute, and as it passes through and around the trays on returning to the fan its speed varies from 40 to 350 feet per minute, increasing as it nears the vortex of the fan to as high as 600 feet per minute. *There is a definite and continuous current of air utilized in the Waxham device moving at a velocity not materially different from the speed of the air current in the Smith patent and accomplishing substantially the same purpose.*"

The admissions of petitioner's witnesses, Fouts and Daugherty, on this point are quite illuminating, and can not be ignored by the petitioner.

Mr. Fouts said (R. p. 248):

> "*It makes no difference whether there is anything to guide the air travelling in the path indicated, if the air does travel in that path.* If the air will travel without a guiding means, and so long as it does go in that path, *it makes no difference whether or not there is any apparatus to guide it.*"
>
> "I think it is probably true that it might be possible to drive a body of air with sufficient force and in sufficient volume so that the main body of that air would travel in a definite path" (R. p. 249).

Daugherty said:

> "*There is a definite circulation of air in each machine.* In Smith this definite circulation is brought

about by a purely mechanical arrangement, that is to say, by the curtain which divides the central corridor from the egg compartments, and almost anyone, by a mere inspection of the machine, could tell in what direction the air would flow through the egg compartment because the curtain insures that.

"'If the curtain were removed, then of course there would be no such definite circulation established. *In the Robbins machine there is also a definite circulation,* but not so easily defined, because there is no mechanical arrangement such as a curtain or partition to compel it to flow in any particular way'" (R. p. 279).

"In other words, while there are obvious currents in the Robbins machine the course is not obvious" (R. p. 282).

"You can easily find it out if you go into the machine with some kind of an instrument or device when it is in operation" (R. p. 287).

"The Robbins machine is a substantially closed chamber with restricted openings, which is essential to the production or existence of the closed circuit we have been discussing, and the circulation or current movement in the machine is due to the action of fans rather than to convection currents and mere differences in temperature" (R. p. 295).

"in the Robbins machine there are currents flowing from front to back and back to front without any mechanical partitions between the two" (R. p. 296).

"*The distinction is entirely one of apparatus rather than flow of air currents themselves. In one case there is a mechanical dividing wall and in the other case no such mechanical dividing wall, but it is only what I would call some of the streamline conditions that determine the flow*" (R. p. 296).

"Q. In other words, you can get the equivalent effect, so far as the current is concerned, by a different capacity fan, you might say, in place of the curtains, isn't that true?

A. In some degree. By different capacity of fan, I want to make clear that I restrict this only to the case where you have a very much higher velocity of

the air particles downward, so that the inertia effect of the air would keep it from deviating from that downward path.

Q. But that would give the same current movement substantially as the currents give to the less velocity of air propelled by the fan, is that correct?

A. Yes, I think that would be true, at a high enough velocity" (R. p. 297).

"Q. Now, I take it that your answer is that if your currents were sufficiently strong, several times the current which is used in the Smith machine, that you could accomplish a downward current through the corridor and upward through the eggs, without the use of the curtain?

A. Yes" (R. p. 298).

(e) Robbins' admissions in other litigation as to current movement of air:

Robbins, the manufacturer of petitioner's apparatus, cannot now maintain that he employs any form of air movement other than the "current" movement of air by reason of statements made in prior litigation. *Robbins* v. *Petersime* (51 F. (2) 174, C. C. A. 10). The owners of the Petersime patent, which is subsequent to the Smith patent, claimed to have a monopoly on the incubation of eggs by means of "agitation" of air through eggs of various stages of incubation. In defending that suit, Robbins testified that he used current circulation of air, as brought out in this case by the examination of Robbins (R. p. 326). The District Court at Denver held that Robbins infringed the Petersime patent. Robbins then filed the extensive petition for rehearing which constitutes Plaintiff's Exhibit No. 17 (Vol. II, p. 23).

At page 6 of this exhibit Robbins says (R. Vol. II, p. 30):

"that in the Robbins machine *appreciable air currents are produced and maintained as a necessary result of the large fan in the rear,* revolving at about two hundred twenty revolutions per minute, and that this fan produces a current circulation of air."

And at page 7 (R. Vol. II, p. 31):

> "that *there is appreciable and well defined current circulation in all parts of the Robbins machine,* and that this circulation is entirely different, as heretofore stated, from the stirring and mixing of the air in the Petersime machine".

and:

> "On the contrary *in the Robbins machine the large fan produces and maintains current circulation of the air in all parts of the machine.*"

and:

> "The fan of the Robbins machine * * * must produce current circulation".

With the motion for rehearing, were submitted the affidavits and reports of tests of two engineers who studied the Robbins machine with accurate instruments. The papers were accompanied by diagrams which plotted the air currents in the Robbins machine and tallied very closely with the findings of respondent's witness Mr. Taggart.

The following quotations will suffice:

(Page 5 of Affidavit of Morton [R. Vol. II, p. 38]):

> "*there are air currents of substantial strength as expressed in feet-per-minute travel terms, in all parts of the incubating and hatching sections of the Robbins incubator,* the travel being forward or toward the front in the exterior portions of the chamber and inward or toward the fan in the interior portions of the chamber, and there are no portions of the chamber where the air is dead or inactive.
>
> Further, we find that *in the Robbins incubator the air currents are positive and continuous* in the directions indicated in the diagrams and as heretofore explained, as distinguished from the mixing and churning effect produced on the air in the Petersime machine." (Italics ours.)

(Page 6 of the Report [R. Vol. II, p. 53]):

> "This test proves conclusively that the *air movements* are in general, *in definite lines or paths,* and that in all areas a decided movement of air was found." (Italics ours.)

(Page 10 of the Report [R. Vol. II, pp. 57-58]):

> "1. In the Robbins Incubator a definite and comparatively strong movement of the air in all parts of the cabinet was found by actual test. This movement in general was toward the front of the cabinet in the outside areas of the cabinet and the return being through the central area. A movement at all points in the cabinet was found."

Fig. No. 7, attached to the report (Vol. II, p. 62) and reproduced on the opposite page is substantially a duplicate of the findings of plaintiff's expert shown on Plaintiff's Exhibits 10, 11 and 12 (Vol. II, pp. 16, 17 and 18). There can be no dispute as to the current movement of air in the Robbins machine.

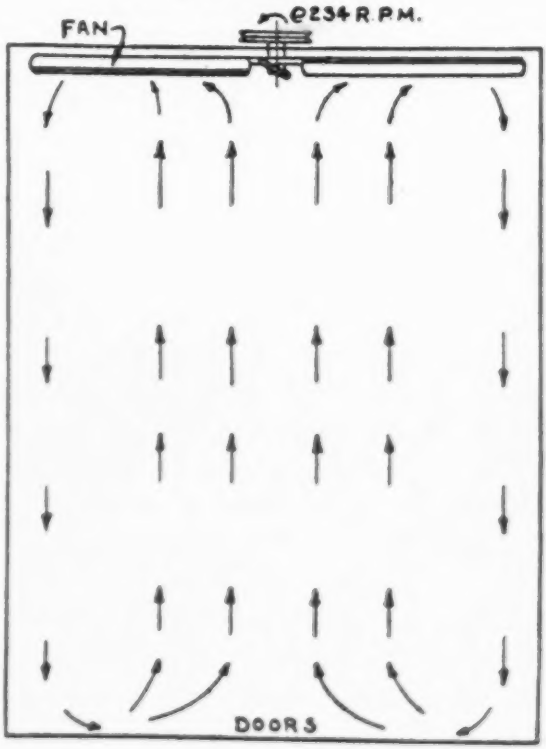
It is also helpful to compare the path of air travel, as illustrated in this drawing, with the path of the air travel in the Smith machine (Pltf.'s Ex. 5, R. Vol. II, p. 11). In both cases the air leaves the fan in current form, strikes the opposite side of the cabinet, and then returns to the fan, to be recirculated through the eggs. In both cases, the egg trays are located in the current of air which is returning to the fans. The only difference is that the air returning to the fan in Smith is outside of the outgoing air stream, while in Robbins, the air returning to the fan is inside of the outgoing air stream. This obviously is immaterial.

The ruling of the Court of Appeals of the Tenth Circuit in the *Robbins-Petersime* case, 51 F. (2d) 174, based upon

Last page Plaintiffs' Exhibit 17.

ROBBINS INCUBATOR
NO. 8-622

PLAN VIEW
LOOKING DOWN
AT ℄ OF FAN.



FRONT

THIS DIAGRAM INDICATES
GENERAL AIR MOVEMENT
AND DIRECTIONS

FIGURE No. 7

ROSCOE W MORTON, M.E. GOLDEN, COLO. | MAR 10, 1930. | C A STILPHEN, H&VE DENVER, COLO.

the representations of Robbins and his engineers as to the character of the air movement in the Robbins machine, amounted to an adjudication that that machine infringes the Smith patent. There are not conceivably more than two types of air movement, either the air is in general commotion or it is moving in current form. The former is Petersime, the latter Smith. Robbins contended in the Tenth Circuit that he had the latter, and the Court so ruled.

The only distinction which the petitioner apparently tries to make between the current movement of air in his incubator and that in Smith is that in petitioner's incubator the air returns to the fans in "broken up currents" (Brief, p. 24). The only thing which serves to break up the current in the petitioner's incubator is the fact that the trays are located in the current. In this respect petitioner's practice is not different from Smith, for in Smith the egg trays are located in the current of air as it returns to the fans, and serve to break up the current in the same way. In this connection it will be observed that the strips 28, located at the bottom of the tilting egg racks in Smith, are not used in commercial devices (R. p. 274), and are not included as any part of a claim of the patent. Petitioner also says on page 6, that in Smith the air is "compelled" to move in defined channels. The movement of air in the Robbins incubator is no different, for the force of the air as it leaves the fans "compels" it to move in defined channels.

(f) The Hillpot case (24 F. (2) 341) distinguished:

Petitioner seeks (p. 28) to bring his practice within the findings of the Circuit Court of Appeals of the Third Circuit in the *Hillpot* case in which infringement was not found. There is, however, the essential difference that Hillpot did not utilize current movement of air through the eggs, while Robbins *does* employ such movement of

air. In its findings upon the operation of the Hillpot machine, the Court said (p. 345):

> "When the warm air leaves the fan there is for a moment and for a short distance a current, but as the force weakens the current fades, and the body of heated air does not go to the opposite wall and mushroom but wanders in between each of the scores of trays and goes where it pleases."

Obviously the method differed in the essential of "current" movement of air. In the present case no such defense can be made for the reasons fully discussed.

As to the absence of curtains the Court said that Hillpot "simply omitted curtains". *The petitioner here did more than omit the curtains. He increased the volume and velocity of the air to such an extent that curtains were not necessary as a directing means for the air.* As petitioner's witness, Daugherty, said (R. p. 296):

> "In the Robbins machine there are currents flowing from front to back and back to front without any mechanical partitions between the two, * * * The distinction is entirely one of apparatus rather than flow of air currents themselves."

The order of egg arrangement was regarded by the Circuit Court of Appeals of the Third Circuit, in the *Hillpot* case, as no factor in deciding the question of infringement, for that Court said (p. 344):

> "But when, as in Smith, the air moves in cycles through corridor and tiers it makes no difference after the first cycle which way it moves through the egg trays, whether from bottom to top or from top to bottom, or whether it first strikes warm eggs or first strikes cool eggs, for in every cycle after the first the current when passing warm eggs will gather up their heat units and carry them to the cool eggs precisely as claimed and will in the same way produce that uniformity of temperature which is the thing sought by the art and achieved by the invention."

It is reasonable to suppose, therefore, that if the *facts* of current flow in the *Hillpot* machine had been shown to be the same as in the *Robbins* machine, the same holding of infringement would have followed.

(g) Summary of petitioner's operation:

All of the steps of the Smith method are found in the operation of the petitioner's machine. There is no difficulty in locating the closed chamber, the restricted openings for the escape of foul air and openings for the introduction of fresh air, and the eggs are arranged in different levels in different stages of incubation.

As shown in the preceding chapters, there is also in the petitioner's machine the forced circulation of air in sufficient velocity so that the air reaches the furthermost recesses of the egg chamber. The air moves in current form from the fans at the rear to the side walls, ceiling and floor of the machine along which it moves until it strikes the front of the machine. The current of air then rebounds from the front wall and is drawn inwardly through the egg trays to the fans. The speed of the outgoing current in the petitioner's machine is somewhat higher than the speed of the outgoing current in the Smith machine, but the speed of the returning current through the mass of eggs is substantially the same in both machines. This is not disputed. The eggs in the petitioner's machine are in the several stages of incubation, and the air, as it passes in repeated cycles over these eggs, necessarily picks up heat from hot eggs and distributes that heat to the cold eggs.

Petitioner has no partitions, and, therefore, he does not infringe the apparatus claims of the Smith patent, but he obtains the same results by increasing the velocity of his outgoing current so that no partitions are necessary.

The sole function performed by the curtains in the Smith machine is to insure that the air, as it leaves the fans overhead, will reach the lowermost hatching trays.

It is perfectly obvious and was admitted by petitioner's expert (*supra,* pp. 30-31) that the same results could be obtained in the Smith machine without curtains by increasing the fan power. The curtains are, in truth, but a refinement of apparatus and their presence or absence in no way makes or destroys the basic principle of current circulation in the Smith machine.

This is a point which the petitioner does not and cannot deny. *Claim 1 is for a process, not for a mechanism which carries out the process.* If, by changing the fan and increasing the volume and velocity of the air, the process of Smith is carried out, infringement is present.

Courts, which have dealt with the Smith patent, have all made their decisions on the character of air movement. The point is based upon the appearance of the word "current" in the claims in suit. The Court of Appeals of the Sixth Circuit said in the *Blum* case (27 F. (2) 333):

> "The result in that case rests also upon the theory that the patent contemplates a distinct, or at least an identifiable, current of air, flowing like a stream in one direction."

The calculations of current velocity and volume show that the increase in volume and velocity is the mechanical equivalent of the curtains, for it secures the same current movement of air as is secured in Smith. As the claims in suit do not specify how the current shall be secured, this change does not avoid infringement.

(h) Robbins copied from Smith:

As in the *Snow* case, so in the present case we find each infringer, before he is able to construct a satisfactory incubator for the mass hatching of eggs, turning to the Smith incubator for the ideas upon which success must be based.

It is the undisputed fact that, when Robbins, the manufacturer of the petitioner's apparatus, sought to partici-

pate in the profitable incubator field, his first efforts were to make a substantial copy of the Petersime machine which was subsequent to Smith. This is narrated in the *Robbins-Petersime* decision by the Circuit Court of Appeals for the Tenth Circuit (51 F. (2d) 174):

> "But by way of experiment, he" (Robbins) "made two machines after Petersime's pattern, * * * He said he did this to break up the bottling of the air within the incubator * * *, and that he destroyed both of these after one hatch in each, having found them unsatisfactory. This * * * was * * * an infringement of Petersime * * *."

After his unsuccessful attempt to copy Petersime, Robbins made two trips to the hatchery operated by Mr. Popp at Denver, and on each trip studied the Smith machine in operation at that plant (R. pp. 177-178). This was in the Fall of 1927. The filing date of Robbins' patent on his present machine was in the following February (R. Vol. II, p. 459).

Robbins was unable to make a successful incubator which operated upon the principle of *air agitation* of which Petersime was an example. He was compelled to adopt the current circulation of air which is characteristic of Smith. He made a deliberate study of the Smith machine, and then built his incubator to perform in exactly the manner as the Smith incubator.

(i) The claim in suit is not confined to the exact procedure set out in the specification, nor is it limited to the use of the apparatus described:

While not denying the fundamental rule of claim construction that it is the *claim* which defines the scope of the patent, petitioner seeks, by detailed reference to the specification at pages 4 to 9, inclusive, of its brief, to reach the result which would follow were the specification to be taken as the measure of the claim.

In the respondent's brief in the *Snow* case (pp. 40-43), we have referred to the fundamental authorities which

establish the rule that the *claim* is the measure of the invention and not the specification.* As we have pointed out above, none of the features upon which petitioner relies are found in the claim in suit. To read limitations into the claim from the specification is a practice which has been repeatedly condemned (see *McCarthy* v. *Lehigh Valley Railroad Co.*, 160 U. S. 110-116). Even were it true that the "terms now found were chosen after rejection, to avoid the prior art" (p. 9, Petitioner's brief), this would be of no moment, for the language as finally adopted and allowed reads upon petitioner's practice.

Nor is it necessary to read any limitations into the claim to avoid the prior art. Such an expedient would be condemned by the rule in *McCarthy* v. *Lehigh, supra,* but such limitations are not imposed by the prior art as we will show immediately.

Although petitioner attempts to camouflage its position, nevertheless it rests upon the fallacy that infringement should be determined by the specification and not by the terms of the claim. But, as stated in *Walker on Patents,* Sec. 396, 6th Ed. page 484:

> "Strictly speaking, infringement of a patent is an erroneous phrase; what is infringed are the claims of the patent which "measure the invention" and define precisely what the invention is, and the limits beyond which one cannot pass without infringing; therefore it is to the claims of the patent to which one must look to determine whether there is an infringement."

(j) The Smith patent is entitled to the full scope of its terms by reason of its contribution to the art:

There can be no denial of the fact that the Smith patent was revolutionary in this art, and its benefits are attested not only by the widespread adoption and extensive use by Smith and his licensee, the Buckeye Company, but

* *Paper Bag Patent Case,* 210 U. S. 405, 419; *Winans* v. *Denmead,* 15 How. 330-343; *Robinson on Patents,* #485, Vol. II, p. 75.

also by the numerous infringements which have taken place since the date of the issuance of the patent. The real defendant in this case, Robbins, has put out a large number of machines (*Robbins* v. *Petersime, supra*), each one of which uses the essentials of staged incubation and forced draft in a substantially closed incubator cabinet. Such facts should be taken into consideration in construing the patent.

Narrow or astute scrutiny of a patent should not be indulged in for the protection of one who has adopted the basic and generic construction of a successful patented device. As was said in *Keystone Mfg. Co.* v. *Adams*, 151 U. S. 139-144:

> "But when, in a class of machines so widely used as those in question, it is made to appear that at last, after repeated and futile attempts, a machine has been contrived which accomplishes the result desired, and when the Patent Office has granted a patent to the successful inventor, the courts should not be ready to adopt a narrow or astute construction, fatal to the grant."

As was stated by Judge Coxe in *Electric Smelting & Aluminum Co.* v. *Pittsburg Reduction Co.*, 125 F. 926-937:

> "Various other limitations upon the claims are urged by which the defendant seeks to avoid infringement. They are of the same general nature and proceed upon the same initial fallacy, namely, that in a generic process patent every phenomenon observed during operation and every minute detail described must be read into the claims and that the least departure from the claims as so construed avoids infringement. Neither position is tenable. In a patent like Bradley's the claims should be as broad as the invention and, even if unnecessary and unreasonable limitations are incorporated in the claims, the court should interpret them liberally and not permit a defendant to escape who reaches the same result by analogous means, though he may employ additional elements and improve mechanical appliances."

Further authorities upon this subject are noted at pages 44 and 45 of our brief for respondent in the *Snow* case.

(k) The prior art imposes no limitations upon which the petitioner can rely:

The patents relied upon by the petitioner here are the same as those relied upon by *Snow* and fully discussed in our brief for respondent in that case (pp. 45-50). They are the same prior patents which have been repeatedly rejected in the unanimous ruling of the lower Courts holding the Smith patent valid.

For the forced draft of air the petitioner relies upon Smith's own experimental work *which was carried on without staged incubation.* Again let us state, most emphatically, that respondent did not admit "that all he did in 1915 * * * was to add the curtains to his old incubator" (Petitioner's brief, p. 19). The reference to the Record at page 545 does not support the petitioner's statement. Dr. Smith stated that the addition of the curtains was "*the most important change in the 1915* STRUCTURE". The repeated statements by Smith that in the preceding years he did not employ staged incubation and which are quoted above (pp. 6 and 7), refute petitioner's statement that all that Smith did in 1915 was to add the curtains. The statement by the petitioner can be nothing less than a deliberate attempt to mislead this Court.

Smith completed his invention covered in the claim in suit by the addition of the final step of *staged incubation,* and the claim is not invalid because he had conceived the other elements of his invention prior to the addition of this "last step". Nor should Smith be deprived of protection because this last step may *now* appear to have been simple. The failure of the prior workers in this art, including Smith himself, to make the *combination of forced draft and staged incubation* is indicative of invention. As was said by this

Court in *The Barbed Wire Patent Case*, 143 U. S. 275, 282-283:

> "Under such circumstances courts have not been reluctant to sustain a patent to the man who has taken the final step which has turned a failure into a success. *In the law of patents it is the last step that wins.* It may be strange that, considering the important results obtained by Kelly in his patent, it did not occur to him to substitute a coiled wire in place of the diamond shape prong, but evidently it did not; and to the man to whom it did ought not to be denied the quality of inventor. *There are many instances in the reported decisions of this court where a monopoly has been sustained in favor of the last of a series of inventors, all of whom were groping to attain a certain result, which only the last one of the number seemed able to grasp.*"

On the subject of staged incubation petitioner relies upon old and discredited patents which represent futile attempts to utilize staged incubation, all of which were failures because they employed no effective means for equalizing the temperature between the hot and the cold eggs. It was only by the *combination* of forced draft and staged incubation that Smith reached success, and it is this combination which is lacking in the prior art, but which is used by petitioner.

The so-called admission (petitioner's brief, p. 18) that staged incubation was old had reference to the argument of the attorney in differentiating the Smith invention from the Winkler patent. The attorney said (R. Vol. II, pp. 348-349):

> "While it is true that in Winkler the eggs are in various stages of incubation and have heated air applied to them, there is no conception of applying the heated air with a predetermined speed or velocity that will adapt the heated air to the eggs in various stages of incubation. In Winkler's method there isn't any suggestion of giving heated air any predetermined speed or velocity. There is merely employed water jackets which heat the eggs and also the eggs

> move from place to place by means of carriers. It is obvious that the eggs in the advanced stages of incubation are not kept from advancing beyond the desirable temperature by the employment of any driving means for the heated air. The only mechanically operated mechanism in Winkler is the mechanism for driving the eggs and that is distinctly different from applicant's conception which is that of driving the air in a way that will make it adapted to the eggs in all stages of incubation."

Later on the attorney in discussing this same patent said (R. Vol. II, p. 359):

> "While it is true the egg conveyor of Winkler is arranged with one section above another he depends entirely on having a separate heater for each section adapted to the stage of incubation of the eggs in its section. Furthermore although his patent was issued as far back as 1883 his construction is not known on the market today showing it could not have been a success. It lacks the essential features that have made the device of applicant a success."

This argument was deemed sufficient to distinguish Smith in the Patent Office, for the claim in suit was allowed after the filing of the argument just quoted. Indeed the Winkler patent is quite absurd, so far as we know, no one ever incubated eggs by rolling them down a series of belts through separate compartments kept at different temperatures. The petitioner follows Smith, not Winkler.

The Stulik German patent is apparently not seriously relied upon. It was considered by the Patent Office and the claim allowed over it. It has no forced draft, no circulation of air in closed cycles, and no equalization of heat by transfer of heat units from hot to cold eggs. Petitioner follows Smith and not Stulik.

The Zimmer patent is an absurd scheme, obviously inoperative, for the reasons given in respondent's brief in the *Snow* case (pp. 48, 49). Again petitioner takes Smith as his pattern for incubation and does not follow Zimmer.

POINT III.

The Claim is Not Void as Functional.

At pages 21-24 of its brief the petitioner makes the highly technical defense that Claim 1 is invalid as the mere function of the machine.

In the present case, however, the process is not merely the function of the machine, but constitutes a series of steps by which a law of nature is put to work. The law of nature utilized by Smith is the heat curve of a developing embryo in the egg (Vol. II, p. 10). While others had known of this, Smith was the first to *utilize* the fact that an egg in the first portion of the incubating period is deficient in heat and in the last portion of the incubating period is an active producer of heat. Prior workers in this art (including Smith himself before 1915) had *combatted* this law of nature. *Smith was the first to harness it and make it accomplish a useful purpose.* This law of nature he put to work by *manually* setting a large quantity of eggs at fractional intervals of the total gestation period, and applying a current of air to those eggs of sufficient velocity to effect the equalization of temperature, without destroying the ability of the eggs to hatch. To practice the invention requires *not only* the propulsion of a current of air in a substantially closed chamber, but also the setting of the eggs and the natural laws of the developing embryo and the heat transfer referred to on page 22 of petitioner's brief.

The process of the Smith patent clearly falls within that class of inventions defined as patentable processes by this Court in *Corning* v. *Burden,* 15 How. 265, 267:

> "But *where the result or effect is produced by* chemical action, by the operation or application of some element or *power of nature,* or if one substance to another, such modes, methods, or operations, are called processes. A new process is usually the result of discovery; a machine, of invention. The arts of tanning, dyeing, making waterproof cloth, vulcanizing

> India rubber, smelting ores, and numerous others, are usually carried on by processes, as distinguished from machines. *One may discover a new and useful improvement* in the process of tanning, dyeing, &c., *irrespective of any particular form of machinery or mechanical device.*"

And, in distinguishing a *process* from the mere function of a machine this Court said in *Risdon Locomotive Works* v. *Medart*, 158 U. S. 68, 77:

> "*It will be observed that*, in all these cases, *the process* was either a chemical one, or *consisted in the use of one of the agencies of nature for a practical purpose.*"

The claim in suit picks out from the disclosure of the patent, the essential steps by which the result can be secured. That this is a *process* within the contemplation of the patent law is hardly to be doubted.

We do not know of any case where a "method" patent has been held void as "functional" simply because the patent shows a machine which will perform the "method". The decision of the Supreme Court in *Expanded Metal Co.* v. *Bradford*, 214 U. S. 366, upset the prior prevailing notion that a process was not patentable if performed by machinery.

The case cited by the petitioner at page 22 (*Holland Furniture Co.* v. *Perkins Glue Co.*) is not pertinent to the facts herein. The patent in that case related to a composition of materials, and the owner of the patent attempted to cover materials not specifically mentioned in the patent, and this Court held that such expansion of the patent would not be allowed.

All method claims are necessarily more or less functional in character, for a patentable method is a series of steps, and when performed by a machine, the method is necessarily the function or mode of operation of the machine. Whether the process of incubating eggs, first evolved by Smith, can be performed in any other apparatus than the patentee's apparatus, is answered by the operations of the petitioner. If petitioner's machine does

embody that method, then the petitioner's statement, that the method cannot be performed by any other apparatus, is effectually answered. If, on the other hand, the method of the Smith patent is not performed in the petitioner's machine there is no infringement. The whole question is one of process and as was pointed out by this Court in *Cochrane* v. *Deener,* 94 U. S. 780-788, 24 L. Ed. 139, 141:

> "A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. *The machinery pointed out as suitable to perform the process may or may not be new or patentable;* whilst the process itself may be altogether new, and produce an entirely new result. The process requires that certain things should be done with certain substances, and in a certain order; but *the tools to be used in doing this may be of secondary consequence.*" (Italics ours.)

There is a remarkable similarity between the facts in the instant case and those in the last cited case. There the invention related to the use of currents of air in the treatment of flour. The defendant and infringer used currents of air for the same general purpose, but applied them in a specifically different manner, just as petitioner here uses currents of air but applies them in a different manner. There were differences in the machinery employed far more substantial than any differences found here, and the defendants claimed to have improved upon the process just as petitioner here claims to have improved upon the process. In that case the patented process had revolutionized the flour industry just as Smith revolutionized the incubator industry. "But," said this Court (p. 787), "it cannot be seriously denied that Cochrane's invention lies at the bottom of these improvements, is involved in them, and was itself capable of beneficial use, and was put to such use."

Conclusion.

Claim 1 of the patent contains none of the limitations which petitioner insists upon for his defense of non-infringement. It covers the essentials which Robbins found it necessary to incorporate in a successful incubator comparable in capacity to Smith's smaller incubators. Petitioner arranges his eggs in superposed tiers or "at different levels" in a chamber which is substantially closed so that the moisture is conserved, and he applies a "current of heated" air to the eggs. The current recycles and recirculates as the Smith current recycles and recirculates, and the equalization of temperature is secured in the same way. The claim calls for a current of "sufficient velocity to circulate, diffuse and maintain the air throughout the chamber at substantially the same temperature". This the petitioner surely employs. The admissions of his own experts on both temperature equalization and current movement spell infringement.

The Smith patent is entitled by its achievements and by the absence of any anticipation to a fair interpretation of the claim in issue. Petitioner's changes do not avoid the claim or cause the incubator to function in any way other than as called for in the claim. Petitioner makes no claim that his incubator operates upon a principle different from that of Smith or accomplishes any new result or the same result in a different manner.

The decision of the Ninth Circuit Court of Appeals should be affirmed.

Respectfully submitted,

CHARLES NEAVE,
ALBERT L. ELY,
LEONARD S. LYON,
Counsel for Respondents.